

# **Fifth wheel traction coupling with a supply of grease for the locking zone.**

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DE3728090 (A1)

DE3612832 (A1)

DE3118633 (A1)

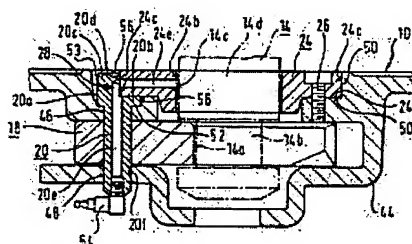
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A lubricant supply for the locking zone of a fifth wheel traction coupling is proposed, in which a bearing surface (24b), open counter to the pulling direction, for an associated king pin (14) is provided on a fifth wheel plate (10) in thrust mode. In order to be able to supply lubricant to a sufficient degree to the surfaces in the locking zone (16) of the fifth wheel coupling which are subjected to particular stress, a lubricant channel system (28) leads to the bearing surface (24b) for the king pin (14).

**Fig. 3**



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The invention relates to a lubricant supply for the lock range of a fifth wheel, with which in paddock a wear ring open against the course direction is to the plant of the associated king pin in the thrust enterprise inserted and is underneath this wear ring a Kupplungshaken around an essentially vertical Schwenkbolzen pivotally mounted, which Kupplungshaken rests strength-transferring in the course enterprise against the king pin.

From the DE-OS 31 18 633 a lubricant supply for a support surface between paddock disposed at a towing vehicle and a rotating plate disposed at a wake vehicle is known. This known lubricant supply is not however in the layer to supply both in the course enterprise and the lock range of the fifth wheel subjected in the thrust enterprise strong stress with lubricant.

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In contrast to this the object of the invention lies to make a lubricant supply available for the lock range of a fifth wheel and train these in such a manner that both in the course enterprise and in the thrust enterprise a sufficient lubrication of the king pin and that is the king pins in its wake position held parts, wear ring and Kupplungshaken, ensured.

This object becomes dissolved by the fact that a lubricant duct system leads by the Schwenkbolzen to the wear ring and within the wear ring to its inner peripheral surface. The lubricant withdraws at the inner peripheral surface of the wear ring and lubricates thus in the thrust enterprise the mutual abutment surfaces of king pins and wear ring reliable. Due to the gravity the lubricant flows to the Kupplungshaken disposed underneath the wear ring. Here it lubricates the mutual abutment surfaces of king pins and Kupplungshaken in the course enterprise. Thus all parts within the lock range of the fifth wheel, which are subject to high stress with the operation, become reliable supplied with lubricant.

From this a reduced wear of the fifth wheel within the lock range results. Beyond that the supply of the lock range of the fifth wheel with lubricant leads to increased ride comfort. The one becomes by the lubrication of the lock range from a relative movement of king pins and wear ring and/or. Kupplungshaken due Rattern, for example with bending or travel on kurviger distance, to a large extent avoided. On the other hand the lubricant works always also than absorbing means, so that shocks king pins against wear ring or Kupplungshaken with the deceleration or accelerating the towing vehicle so strong do not become noticeable. By the guide of the lubricant duct system by the Schwenkbolzen and the wear ring a lubricant supply of the lock range of the fifth wheel with small constructional can become effort provided.

In development of the invention proposed becomes that the Schwenkbolzen in the region of its upper end rests against the wear ring in at least one pair of contact areas that a swiveling pin channel longitudinal within the Schwenkbolzens essentially oh savings allele or oh coincidence into a swivelingpin-lateral contact surface out-flowed and that an essentially radial wear ring channel longitudinal by the wear ring out-flows radial outer into a verschleissringseitige contact surface of the pair of contact areas. Thereby a direct transition of the lubricant of the swiveling pin channel becomes possible into the wear ring channel.

In a first embodiment of the lubricant supply is provided that the Schwenkbolzen at its upper end possesses an extension, which forms a swivelingpin-lateral contact surface parallel to the swiveling pin axle and that this swivelingpin-lateral contact surface rests against a part of a radial outer circumferential surface of the wear ring, whereby that is oh savings allele or oh coincidence longitudinal swiveling pin channel into the extension inside continued and begins to cut the oh savings alleles contact surface of the Schwenkbolzens, while the radial longitudinal wear ring channel flows into the radial outer circumferential surface of the wear ring. By the plant of the swiveling pin extension at the radial outer circumferential surface of the wear ring a rotation of the Schwenkbolzens can become relative the wear ring prevented, so that always ensured can become that the swiveling pin channel and the wear ring channel flow into one another.

In order to prevent that between Schwenkbolzen and wear ring lubricant withdraws, proposed becomes that the oh savings alleles contact surface of the Schwenkbolzens is by a permanent elastic sealant against the radial outer circumferential surface of the wear ring sealed.

In an alternative embodiment of the lubricant supply is provided that is formed at the upper end of the Schwenkbolzens a contact surface essentially normal to its axis and that the wear ring exhibits a contact surface essentially normal to its axis.

In development of this alternative embodiment proposed becomes that is branched of the essentially radial longitudinal wear ring channel a transverse channel, which flows into the contact surface of the wear ring.

A simple manufacture of the Schwenkbolzens with a oh-normal, flat contact surface can take place bottom maintenance of the circular form of the wear ring and already the conventional layer of the Schwenkbolzens partly outside of the outline of the wear ring in this embodiment via the fact that is branched of the swiveling pin channel in the upper end region of the Schwenkbolzens an oblique channel, which flows into the contact surface of the Schwenkbolzens essentially normal to the swiveling pin axle.

In order to guarantee an exit of lubricant between Schwenkbolzen and wear ring, proposed becomes that is clamped between the contact surface of the Schwenkbolzens normal to the swiveling pin axle and the contact surface of the wear ring essentially oh-normal to the wear ring axle a seal.

In order to prevent also with this embodiment a rotation of the Schwenkbolzens relative to the wear ring, is provided that the Schwenkbolzen upward possesses an extension managing over the oh-normal contact surface, which rests with a twist lock-flat against an outer circumferential surface of the wear ring.

A particularly simple manufacture of the wear ring channel can become by the fact ensured that the essentially radial longitudinal wear ring channel up to a radial outer circumferential surface of the wear ring is continued and completed by a closure element there.

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In development of the invention becomes proposed that the wear ring is into a radial inward and upward open ring recess the paddock inserted, with its radial outer circumferential surface at a radial inner peripheral surface this ring recess lies close, with a oh-normal support surface on the floor of this ring recess rests upon and that an upper end portion of the Schwenkbolzens is into a countersink of the floor of the ring recess countersunk in such a manner that at least within the outline of the wear ring a convenient part of the upper pin end essentially flush lies with the bottom surface of the ring recess.

Upward an extension of the Schwenkbolzens supernatant over the abutment surface of the wear ring received can be by a radial extension in the circumferential wall of the ring recess, indifferently whether this extension serves only the twist lock of the Schwenkbolzens or also the formation of a contact surface.

In order to be able to introduce in simple manner lubricant into the lubricant duct system, becomes proposed that is provided at the lower end the Schwenkbolzens a terminal for a central lubrication line and/or a lubricant press.

Here are particularly preferred that the lubricant supply is part of a central lubricant supply, which serves also the supply of the support surface of the coupling plate with lubricant.

The invention will become in the following on the basis the drawing at embodiments more near explained. Represent:

Fig. 1 a plan view on with the lubricant supply according to invention a provided paddock;

Fig. 2 a section along line II-II in Fig. 1;

Fig. 3 an enlarged view of the detail A in Fig. 2 of a first embodiment of the lubricant supply;

Fig. 4 a partial perspective view of a Schwenkbolzens of this first embodiment;

Fig. 5 a view analogue Fig. 3 of a second embodiment and

Fig. 6 a view analogue Fig. 4 of this second embodiment.

In Fig. 1 is paddock a general with 10 designated. It points an insertion slot 12 open against the course direction Z to king pin 14 into the lock range 16 of the fifth wheel connected for the introduction with a wake vehicle. The king pin 14 becomes by a Kupplungshaken 18 (in Fig. 1 partial broken shown) in its wake position in accordance with Fig. 1 held. The Kupplungshaken 18 is around a Schwenkbolzen 20 pivotable journaled and by toward the arrow B movable locking part 22 in its in Fig. 1 represented locking position held, into which it the king pin 14 in its wake position secures.

If those becomes paddock in the course enterprise relative the king pin 14 in course direction Z moved, then the Kupplungshaken 18 with an abutment surface 18a is strength-transferring because of the outer circumferential surface 14a of a first prolonged section 14b (see Fig. 3) the king pin 14 on. In the thrust enterprise the king pin 14 with the outer circumferential surface 14c of a second prolonged section 14d lies (see Fig. 3) at a surface portion 24a of a wear ring 24 strength-transferring on. The wear ring 24 exhibits an opening 25 directed against the course direction Z and is by bolt 26 at the paddock 10 fixed.

Due to the strength-transferring plant of the king pin 14 at the Kupplungshaken 18 and/or. Wear ring 24 in the course enterprise and/or. in the thrust enterprise are subject the peripheral surfaces 14a and 14c king pins 14 as well as the surface portions 18a and 24a of the Kupplungshakens 18 and/or. Wear ring 24 of special stress and thus increased wear. It is required to supply the surface portions managing specified sufficient with lubricant.

For this 28 lubricants become the inner peripheral surface 24b of the wear ring 24 passed by a lubricant duct system. The lubricant distributed itself here by the relative movements of the king pin 14 arising in the operation and the paddock 10 in entire, special stress the subjected surface portion 24a of the wear ring 24 and on the outer circumferential surface 14a of the king pin 14. Due to the gravity the lubricant runs off downward and meets (see. Fig. 2) on the Kupplungshaken 18, where it itself likewise by the relative movements of king pin 14 and paddock 10 on the abutment surface 18a and the outer circumferential surface 14c of the king pin 14 distributed. Thus also these special stress subjected regions of the lock range 16 of the fifth wheel become always sufficient supplied with lubricant.

The supply of the lock range 16 of the fifth wheel with lubricant has an increased ride comfort to the sequence. By the lubrication of the lock range 16 the king pin 14 slides for example when bending or with travel on kurviger distance without too rattern along the wear ring 24 and/or. at the Kupplungshaken 18. Besides the lubricant works always also as absorbing means, so that shocks king pin 14 against the wear ring 24 or the Kupplungshaken 18 with the deceleration or accelerating the towing vehicle so strong do not become noticeable.

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The lubricant duct system 28 is 30 connected to a lubricant supply line, which is central lubricant supply 32 connected disposed with one bottom the paddock 10. Other 32 lubricant supply lines 30 outgoing from the central lubricant supply lead to drillings of supply of lubricant 34a von Schmiernuten 34. The oil grooves 34 run wellenzugförmig and are in an part-annular support surface 36 for a not represented rotating plate of the wake vehicle disposed. By the wave train form of the oil grooves 34 an essentially uniform lubrication of the entire support surface can become 36 ensured. Excess lubricant can withdraw from the oil grooves 34 at groove extensions 34b, which exhibit a cross section reduced opposite the groove cross section.

In Fig. 2 is a sectional view the paddock 10 shown. Paddock the 10 is by mounting bolts 38 at bearing blocks 40 fixed, which for their part supported tiltable by means of bolts 42 at a not represented base are.

Fig. the detail A from Fig shows 3. 2 of a first embodiment of the lubricant supply in enlarged yardstick, whereby the king pin is 14 in its wake position dash-dotted shown.

Like already previously mentioned, the king pin becomes 14 held by the Kupplungshaken 18 in its wake position. The Kupplungshaken 18 is of a Schwenkbolzen 20 pivotable supported and between the paddock 10 and with this integral formed approach 44 guided. The Schwenkbolzen a penetrated bore 46 in the paddock 10 as well as a bore 48 in the approach 44. The Schwenkbolzen 20 is secured by the wear ring 24 in its installation position. The wear ring 24 is by bolts 26, of those in Fig. 3 only a shown is, with the paddock 10 bolted. The wear ring 24 is into a radial inward and upward open ring recess 50 the paddock 10 inserted and lies close with its outer peripheral edge 24c at the inner peripheral edge of the ring recess 50. With a longitudinal, planar support surface 24d essentially vertical to the ring axle the wear ring 24 flat the floor 50a of the ring recess 50 rests upon.

An head portion 20a of the Schwenkbolzens 20 is into a countersink 52 of the ring recess 50 in such a manner inserted that the part 20b of the head portion 20a of the Schwenkbolzens lain within the outline of the wear ring 24 locks 20 flush with the bottom surface 50a of the ring recess 50. An extension 20c of the head portion 20a of the Schwenkbolzens 20 towers above the bottom surface 50a of the ring recess 50 and rests with a contact surface 20d essentially parallel to the swiveling pin axle against the outer peripheral edge 24c of the wear ring 24. The head portion 20a is in a radial extension 53 in the circumferential wall of the ring recess 50 received, so that it does not exceed over paddock the 10.

An essentially parallel bore 20e extended longitudinal to the swiveling pin axle itself of in Fig. 3 bottom end of the pin shank 20f into the head portion 20a of the Schwenkbolzens 20 inside and the contact surface 20d of the Schwenkbolzens 20 cuts on (see. also Fig. 4). The bore 20e forms the swiveling pin channel. The wear ring 24 becomes of its inner peripheral surface 24b its outer circumferential surface 24c of a radial bore 24e penetrated, which forms the wear ring channel. In the mounted state in accordance with Fig. the wear ring channel 24e flows to 3 into the swiveling pin channel 20e. The wear ring channel 24e and the swiveling pin channel 20e form together the lubricant duct system 28.

In order to be able to supply to the lubricant duct system 28 lubricants, a fitting is 54 disposed at the lower end the swiveling pin shank 20f, to which for example one of the lubricant supply lines 30 and/or a lubricant press connected can become. The supplied lubricant becomes by the fitting 54 into the swiveling pin channel 20e, by this the inner

peripheral surface 24b of the wear ring 24 passed other to the wear ring channel 24e and. In order to prevent a withdrawing of lubricant with the transition of the swiveling pin channel 20e to the wear ring channel 24e, the Schwenkbolzen 20 and wear ring is 24 56 sealed by a permanent elastic sealant.

After the exit from the wear ring channel 24e distributed itself the lubricant due to with the operation arising the relative movements of the king pin 14 relative to paddock 10 between the inner peripheral surface 24b of the wear ring 24 and the outer circumferential surface 14c of the second prolonged section 14d of the king pin 14. Due to the gravity the lubricant runs off downward and arrives at the Kupplungshaken 18, where it itself between the surface portion 18a of the Kupplungshakens 18 and the outer circumferential surface 14a of the first prolonged section 14b of the king pin 14 distributed, whereby also in this region is provided for a reliable lubrication.

In Fig. 4 is a partial perspective view of the Schwenkbolzens 20 shown. The upper extension 20c of the Schwenkbolzens 20 is by milling the head portion 20a along the outer peripheral edge 24c of the wear ring 24 a corresponding contour formed and has therefore in the plan view, D. h. along the swiveling pin axle seen, a halbmond förmigen cross section. In Fig. 3 represented assembled state the prevented plant of the contact surface 20d of the Schwenkbolzens 20 at the outer peripheral edge 24c of the wear ring 24 a rotation of the Schwenkbolzens 20 around its axis.

In Fig. 5 is a second embodiment of the lubricant supply for the lock range of a fifth wheel shown, which essentially the embodiment in accordance with Fig. corresponds to 3. Analogue parts are provided therefore with same numerals as in Fig. 3, however increased around the number 100.

Also with this embodiment the penetrated Schwenkbolzen 120 with its shank 120f a bore 146 in the paddock 110 and a bore 148 in with the paddock 110 integral formed approach 144. With its head portion 120a the Schwenkbolzen 120 is into a countersink 152 of the ring recess 150 inserted. The Schwenkbolzen 120 becomes secured by the wear ring 124 in its position, which by means of bolts 126 with the paddock 110 bolted is.

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One of the bottom end of the swiveling pin shank 120f outgoing bore 120e extended itself essentially by the entire swiveling pin shank 120f. A diagonal bore 120g outgoing from the head-lateral end of the bore 120e connects the bore 120e with an essentially vertical contact surface 120h longitudinal to the swiveling pin axle. The bores 120e and 120g form together the swiveling pin channel.

In the wear ring 124 a radial bore 124e leads radial outward up to a transverse bore 124f, which connects the radial bore 124e with a longitudinal contact surface 124g essentially vertical to the wear ring axle. The bores 124e and 124f form together the wear ring channel.

The lubricant duct system 128 becomes thus in this embodiment of the bore 120e and the diagonal bore 120g of the Schwenkbolzens 120 as well as of the transverse bore 124f and the radial bore 124e of the wear ring 124 formed. The simple manufacture itself of the not complete radial bore 124e extending up to the outer circumferential surface 124c of the wear ring 124 first a section 124e1 of the radial bore 124e longitudinal up to the outer circumferential surface 124c can become by a closure element 158 sealed. This closure element 158 for example of a bungee cord catch the formed its, portion 124e1 can be however also welded shut.

In order to prevent in the operation an exit of lubricant with the transition of the Schwenkbolzen 120 to the wear ring 124, 124g of the wear ring 124 a seal member 160 inserted can be between the against each other-located contact surfaces 120h of the Schwenkbolzens 120 and, which one exhibits the contact surface 120h corresponding shape.

The distribution of the lubricant between the inner peripheral surface 124b of the wear ring 124 and the outer peripheral edge 114c of the second prolonged section 114d of the king pin 114 as well as between the surface portion 118a of the Kupplungshakens 118 and the outer peripheral edge 114a of the first prolonged section 114b of the king pin 114 made in the similar manner as this already managing on the basis Fig. 3 explained is.

Also in this embodiment the lubricant of a central lubricant supply or a lubricant press can become over a fitting 154 into the lubricant duct system 128 introduced.

In Fig. 6 is a partial perspective view of the Schwenkbolzens 120 shown. The upper extension 120c of the Schwenkbolzens 120 is, like already 20 mentioned with the Schwenkbolzen became, by milling the head portion 120a along the outer peripheral edge 124c of the wear ring 124 a corresponding contour formed and has therefore in the cross section likewise the form of a Halbmonds. In Fig. the surface 120d of the Schwenkbolzens 120 by its plant at the outer peripheral edge 124c of the wear ring 124 as rotating protection for the Schwenkbolzen 120 formed by milling works 5 represented assembled state.

To the lubrication of the region between the outer circumferential surface of the swiveling pin shank 20f and/or. 120f and the Kupplungshaken 18 and/or 118 is it in principle possible, the Schwenkbolzen 20 and/or. 120 with one of the bore 20e and/or. to provide 120e outgoing radial bore. However the lubricant arrives also due to the gravity on the basis of the radial bore 24e and/or. 124e of the wear ring 24 and/or. 124 into the region mentioned and provides

also here for reliable lubrication.

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1. Lubricant supply for the lock range (16) of a fifth wheel, with which in paddock (10; 110) against the course direction (Z) an open wear ring (24; 124) to the plant of the associated king pin (14; 114) in the thrust enterprise inserted is and underneath this wear ring (24; 124) a Kupplungshaken (18; 118) around an essentially vertical Schwenkbolzen (20; 120) pivotally mounted is, which Kupplungshaken (18; 118) in the course enterprise at the king pin (14; 114) strength-transferring, characterised in that a lubricant duct system (28 fits; 128) by the Schwenkbolzen (20; 120) to the wear ring (24; 124) and within the wear ring (24; 124) to its inner peripheral surface (24b; 124b) leads.

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2. Schmiermittelversorgung according to claim 1, characterised in that of the Schwenkbolzen (20; 120) in the region of its upper end (20a; 120a) at the wear ring (24; 124) in at least one pair of contact areas (20d, 24c; 120h, 124g) lies close that within the Schwenkbolzens (20; 120) essentially oh savings allele or oh coincidence longitudinal swiveling pin channel (20e; 120e, 120g) into a swivelingpin-lateral contact surface (20d; 120h) out-flowed and that an essentially radial by the wear ring (24; 124) longitudinal wear ring channel (24e; 124e, 124f) radial outer into a verschleissringseitige contact surface (24c; 124g) the pair of contact areas (20d, 24c; 120h, 124g) out-flows.

3. Schmiermittelversorgung according to claim 2, characterised in that of the Schwenkbolzen (20) at its upper end (20a) an extension (20c) possesses, which forms a swivelingpin-lateral contact surface (20d), parallel to the swiveling pin axle, and that this swivelingpin-lateral contact surface (20d) rests against a part of a radial outer circumferential surface (24c) of the wear ring (24), whereby that is oh savings allele or oh coincidence longitudinal swiveling pin channel (20e) into the extension (20c) inside continued and begins to cut the oh savings alleles contact surface (20d) of the Schwenkbolzens (20), during which radial longitudinal wear ring channel (24e) into the radial outer circumferential surface (24c) of the wear ring (24) flows.

4. Schmiermittelversorgung according to claim 3, characterised in that the oh savings alleles contact surface (20d) of the Schwenkbolzens (20) by a permanent elastic sealant (56) against the radial outer circumferential surface (24c) of the wear ring (24) sealed is.

5. Lubricant supply according to claim 2, characterised in that at the upper end (120a) of the Schwenkbolzens (120) a contact surface (120h), essentially normal to its axis, formed is and that the wear ring (124) exhibits a contact surface (124g), essentially normal to its axis.

6. Lubricant supply according to claim 5, characterised in that of the essentially radial longitudinal wear ring channel (124e) a transverse channel (124f) branched is, which flows into the contact surface (124g) of the wear ring (124).

7. Schmiermittelversorgung after one of the claims 5 or 6, characterised in that of the swiveling pin channel (120e) in the upper end region (120a) of the Schwenkbolzens (120) an oblique channel (120g) branched is, which flows into the contact surface (120h) of the Schwenkbolzens (120), essentially normal to the swiveling pin axle.

8. Lubricant supply after one of the claims 5 to 7, characterised in that between the contact surface (120h) of the Schwenkbolzens (120), normal to the swiveling pin axle, and the contact surface (124g) of the wear ring (124), essentially oh-normal to the wear ring axle, a seal (160) clamped is.

9. Schmiermittelversorgung after one of the claims 5 to 8, characterised in that of the Schwenkbolzen (120) one over the oh-normal contact surface (120h) managing extension (120c) possesses upward, which rests with a twist lock-flat (120d) against an outer circumferential surface (124c) of the wear ring (124).

10. Lubricant supply after one of the claims 5 to 9, characterised in that the essentially radial longitudinal wear ring channel (124e) up to a radial outer circumferential surface (124c) of the wear ring (124) continued and by a closure element (158) completed is there.

11-lubricant supply after one of the claims 1 to 10, characterised in that the wear ring (24; 124) into a radial inward and upward open ring recess (50; 150) the paddock (10; 110) inserted is, with its radial outer circumferential surface (24c; 124c) at a radial inner peripheral surface of this ring recess (50; 150) lies close, with a oh-normal support surface (24d; 124d) on the floor (50a; 150a) this ring recess (50; 150) it rests upon and that an upper end portion (20a; 120a) the Schwenkbolzens (20; 120) into a countersink (52; 152) the floor (50a; 150a) the ring recess (50; 150) countersunk is in such a manner that at least within the outline of the wear ring (24; 124) convenient part (20b; 120b) the upper pin end (20a; 120a) essentially flush lies with the bottom surface (50a; 150a) the ring recess (50; 150).

12. Lubricant supply according to claim 11, characterised in that over the abutment surface (24d; 124d) the wear ring (24; 124) upward supernatant extension (20c; 120c) the Schwenkbolzens (20; 120) of a radial extension (53; 153) in the circumferential wall of the ring recess (50; 150) received is.

13. Lubricant supply after one of the claims 1 to 12, characterised in that at the lower end the Schwenkbolzens (20; 120) a terminal (54; 154) for a central lubrication line (30) and/or a lubricant press provided is.

14. Lubricant supply after one of the claims 1 to 13, characterised in that the lubricant supply part of a central lubricant supply (32) is, also the supply of the support surface (36) the paddock (10; 110) with lubricant serves.

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